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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,101	10/17/2003	Peter Jomo Walla	B1180/20020	9245
3000	7590	02/23/2006	EXAMINER	
CAESAR, RIVISE, BERNSTEIN, COHEN & POKOTILOW, LTD. 11TH FLOOR, SEVEN PENN CENTER 1635 MARKET STREET PHILADELPHIA, PA 19103-2212			DETSCHER, MARISSA	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/688,101

Applicant(s)

WALLA ET AL.

Examiner

Marissa J. Detschel

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-15, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 5-8 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/10/03, 4/13/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements filed on November 10, 2003, and April 13, 2005, have been fully considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 3, 9-13, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Wulf (USPN 6,229,635).

Regarding claim 1, Wulf discloses a method for analyzing properties of a sample by measuring fluorescence parameters in multiple foci, comprising the steps of:

Splitting a collimated primary laser beam (21) with a splitting device (11) into at least two collimated secondary laser beams and deflecting the secondary laser beams (off 11) such that the secondary laser beams propagate at different propagation angles with respect to an optical axis of the focusing optic (26, 28, 30) (column 5, lines 22-30, Figure 1 and Figure 2);

Focusing the secondary laser beams with the focusing optic into at least two volume elements in the sample (40) (column 3, lines 63 to column 4, line 2);

Detecting light emitted from the volume elements with a detecting device (50) (column 4, line 46-54); and

Evaluating the detected light for obtaining properties to be analyzed (column 1, lines 32-35).

Regarding claim 3, the splitting step of Wulf comprises a broadening of the primary laser beam to provide a broadened primary laser and directing the broadened primary laser onto a mirror array reflecting the secondary laser beams (column 3, lines 38-48).

Regarding claim 9, the primary laser beam of Wulf is generated with an intensity and wavelength suitable for multi-photon excitation of the sample and the focusing step comprises a multi-photon excitation of the sample in the at least two volume elements (column 6, lines 15-35). The focusing of the light beams as separate point on the sample being tested and the detection of the light on the detector designed so each point in the sample plane corresponds to a point in the detector plane is an example of multi-photon excitation, because at each point, a separate excitation value (i.e. fluorescence) will be detected.

In regards to claim 10, the focusing optic of Dietz is a confocal focusing optic (26, 28, 30) and the detecting step comprises projecting the at least two volume elements with the focusing optic and a beam splitter (32) on corresponding detector units of the detecting device (Figure 3 and 4, column 5, line 64 to column 6, line 7 column 6, lines 15-35).

Regarding claim 11, Wulf discloses a method wherein detecting and evaluating steps comprise combining the signals at different points and from different detection units into information about the sample (column 6, lines 26-28).

In regards to claim 12, Wulf discloses a device for performing a method for analyzing properties of a sample by measuring fluorescence parameters in multiple foci, as presented in claim 1, comprising:

A source (20) for generating a collimated primary laser beam (column 3 lines 38-48);

A splitting device for splitting the primary laser beam (21) into at least two secondary laser beams, wherein the splitting device contains plane refractive or reflective surfaces arranged for forming the secondary laser beams has a different propagation angle with respect to an optical axis of a focusing optic (Figure 1 and 2, column 5, lines 22-30);

The focusing optic (26, 28, 30) for focusing the secondary laser beams into at least two volume elements in a sample (40) (column 3, line 63 to column 4, line 2); and

A detecting device (50) for detecting light emitted from the volume elements and for evaluation the detected light in order to obtain the at least one property to be analyzed (column 4, lines 46-54 and column 1, lines 32-35).

Regarding claim 13, the splitting device of Wulf comprises a mirror array having at least two mirrors forming the reflecting surfaces (Figure 2).

In regards to claim 19, the mirrors of the mirror array (11) of Wulf are moveable for adjusting the propagation angles of the secondary laser beams (column 6, lines 4-7).

Regarding claim 20, Wulf's method further comprises obtaining spatial-resolved fluorescence spectroscopic measurements (column 2, lines 27-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 4, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wulf (USPN 6,229,635) as applied to claim 1 above, and further in view of Hoyt (USPN 6,455,861).

In regards to claim 2, Wulf does not disclose the method of producing at least two secondary laser beams having identical intensities, peak intensities, and/or beam profiles at a plurality of wavelengths in a device for fluorescence detection. Hoyt discloses the method of using a set of multiple-beam lasers created by sending an

incident beam (31) through a beam-dividing diffracting element (32) and outputting multiple beams with approximately equal energy (i.e. intensity) in a device for detecting fluorescence from a sample (column 10, lines 17-30). This allows large numbers of samples to be read at once by introducing the multiple beams to a sample for excitation, resulting in fluorescence, using a single illumination source. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the method of creating multi-beam lasers with approximately equal energy in a device for detecting fluorescence from a sample in several illumination areas, in order to reduce costs by using one light source as opposed to multiple light sources, each light source being used to excite a specific area.

Regarding claims 4, 14, and 15, Wulf does not disclose the method or device of a neutral density filter or a diffractive beam shaper to perform profile shaping of the primary beam in a method or device for fluorescence detection. Hoyt discloses the method and device of a beam-dividing diffractive optical element to create a set of multiple-beam lasers of approximately equal energy from an incident beam by sending the incident beam through the beam-dividing diffracting element in a fluorescence polarization invention that can be practiced on fluorescence instruments. (Abstract and column 10, lines 17-30) This is an example of profile shaping. The profile shaping is done using a diffractive beam shaper in the form of a beam-diffracting element. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the beam shaping of Hoyt in Wulf's device in order to profile and shape the incident beam into a set of multiple beam lasers having approximately equal energy to be sent

through the device for measurement, resulting in a more accurate measurement since the beams have approximately equal energy, and thus, will send out the same amount of excitation energy in each section for fluorescent detection.

Allowable Subject Matter

Claims 5-8 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 5 and 16, the prior art of record, taken alone or in combination, fails to disclose or render obvious the use of a prism to create secondary laser beams from a primary laser beam in a device for analyzing a sample based on fluorescence parameters at multiple foci, in combination with the rest of the limitations of claims 5 and 16.

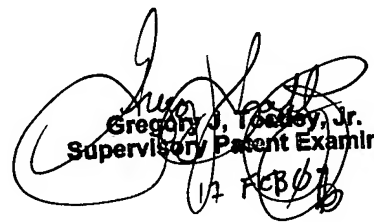
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa J. Detschel whose telephone number is 571-272-2716. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marissa J Detschel
February 10, 2006
MJD


Gregory J. Tolley, Jr. -
Supervisory Patent Examiner
17 FEB 06